

An Examination of the Quality of Web Disclosure Practices Through an Analysis of Firm Characteristics, Semantic Properties and Tone

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ABSTRACT

This research aimed to measure the quality of voluntary web-disclosure by listed companies in Indonesia, using a voluntary web-disclosure index to capture both quality and quantity of web-disclosures. Focussing on the dimensions of web-content and the presentation of information, this study scored 44 web-disclosure items using a dichotomous score to examine the variety of information and an ordinal score to examine the depth of the disclosure. The findings revealed that on average, the quality of voluntary web-disclosure in Indonesia is relatively low. Disclosure appeared heavily centred on financial information, with information on corporate governance and corporate social responsibility being only moderately disclosed. The differences of firm size and industry type among sample companies were found to be significantly positive when matched to the web-disclosure index. This confirms postulations of the Agency Theory and Signalling Theory which suggest that companies were motivated to signal accountability and transparency through their websites. This study extends prior research on web-disclosure by demonstrating that the use of semantic properties contributes to the richness of examining voluntary web-disclosure as it offers greater insights into the transparent reporting practices by corporate entities.

Keywords: agency theory, signalling theory, voluntary web-disclosure, semantic properties, firm characteristics

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INTRODUCTION

Since the Asian financial crisis occurred in 1997, Indonesia has encountered increasing demand and pressures for better disclosure and transparency. The pressures are then exacerbated by global environment growing more complicated and dynamic. Meaning of transparency changes from merely the release of financial information by companies to an approach which is more complete and proactive. This change leads to firms to be under pressure to focus not just on the quantity but also on the quality of information which is more timely, accessible, accurate, and valuable.

Advance features offered by web-disclosures have been considered useful to help companies to facilitate and respond to the rising pressure and demand of disclosures and transparency. Sandhu and Singh (2019) suggested that web-disclosure potentially solves well-recognized problems of traditional paper-based by facilitating timely reporting, convenient presentation format, and a wider audience. However, despite these advantages, the number of listed companies which fully utilize and leverage the internet application in their reporting and information disclosure practices are still limited in Indonesia. Djajadikerta and Trireksani (2012) reported that practices of web-disclosure by Indonesian listed companies is still at an early stage. Recently, Adityawarman and Khudri (2018) showed that few listed companies in Indonesia have utilized internet technology optimally. Some of the companies even do not update their website leaving the information outdated.

Yet, in more recent times, attention has been on the web-disclosure practices of organisations as websites have become the primary site for disseminating information to stakeholders. Regulatory agencies also recognise the importance of websites for disclosing information, and increasingly, impose conditions to govern web-disclosure practices. The Indonesian Financial Service Authority (OJK) for example, requires all public-listed companies in Indonesia to provide specific information on their websites which includes general information, investor relation information, corporate governance information and corporate social responsibility information (OJK, 2015). The introduction of this regulation has transformed the web-disclosure practices of public-listed companies in Indonesia, making web-disclosure a partially regulated practice in the country (Boubaker et

al., 2011). Besides providing the mandatory information, companies in Indonesia may of course offer voluntary web-disclosure although it is not required under OJK regulations.

With provision for both voluntary and mandatory disclosure of information, web-disclosure practices may vary significantly across companies. Regulations tend to focus on merely ensuring the presence of a specific set of information on websites while the quality of that information is not governed. Considering the fact that the mere presence of information does not necessarily translate into greater trust or good governance (Ntim et al., 2013), there is a need to support organisations to better manage the quality of their web-disclosure practices. Anchored to this contention, the present study reports on the development of a voluntary web-disclosure index (henceforth, VWDI) as a measurement of the quality of corporate web-disclosure to enhance comprehensiveness, comparability and credibility of company websites.

Most prior studies by Botti et al. (2014), Boubaker et al. (2011), Bowrin (2015), and Sandhu and Singh (2019) constructed a web-disclosure index based on a checklist of certain disclosure items which cover several themes of disclosures. The index may be a good indicator of disclosure level but the scores of the disclosure indices are not necessarily measures of disclosure quality (Ibrahim & Hussainey, 2019). The use of the index assumes that the extent of disclosure (i.e., quantity) is an adequate measure of the quality disclosure. However, Beretta, and Bozzolan (2008) suggested that when the disclosures presented are more narrative in nature, the assessment of the quality of disclosure cannot be based purely on the quantity of information. Instead, the analysis on the semantic property is considered to be able to capture other textual characteristics of the narrative so that the quality of the information can be measured more accurately (Shivaani et al., 2019). Therefore, VWDI proposed by this study tries to improve measurement of the level of voluntary web-disclosure by not only capturing the quantity of the information but also the quality of the narratives of the disclosures. Shivaani et al. (2019) contend that semantic properties should be considered when measuring the depth and richness of disclosures, and interest in this has begun to gain momentum although the accounting literature appears to emphasise on the quantity of disclosure rather than quality. According to Jia et al. (2016) and Michelin et al. (2015), the examination of semantic

properties, as proposed by Beretta and Bozzolan (2008), is important because measurement should not only emphasise the quantity of information being disclosed but also the quality of that information. Beretta and Bozzolan (2008) describe this as the depth or richness of information, and suggested that high-quality information better supports stakeholders in making decisions as they evaluate the past performance and predict the future performance of an organisation.

Guided by this call to focus on quality, the primary objectives of this research were twofold. First, we measured the extent of voluntary web-disclosure made by Indonesian listed companies by developing a voluntary web-disclosure index (VWDI) which took into account information variety as well as the depth or richness of information. Second, this study investigated the relationship of firm characteristics on the level of the VWDI.

The development of the VWDI proposed in the present study may support policymakers and regulators in measuring and assessing the quality of web-disclosure practices. The index may also support companies develop websites which are of better quality so that greater trust can be established to draw more investors and improve relations with stakeholders. The empirical evidence presented in this study may also help regulatory agencies in Indonesia to improve the current voluntary and mandatory web-disclosure practices as a way of promoting greater corporate transparency.

Theories on Voluntary Disclosure

The present study draws on the Agency Theory (AT) and the Signalling Theory (ST) as the basis for exploring the motivation of companies to disclose information through their websites. The AT highlights the role of disclosure in reducing information asymmetry and improving good corporate governance practices by minimising opportunistic behaviour among those in management (Jensen & Meckling, 1976). Similarly, voluntary web-disclosure is viewed as a mechanism through which companies may disclose more to reduce agency costs (Dolinšek & Lutar-Skerbinjek, 2018; Kelton & Yang, 2008; Khalil & Maghraby, 2017). The Internet as a channel for information dissemination promotes greater opportunities for corporate disclosure (Nassir Zadeh et al., 2018; Sandhu & Singh, 2019).

Though the ST was first developed to explain behaviour in labour markets, it is also applicable in accounting to explain corporate disclosure practices (Campbell & Shrives, 2001; Dolinšek & Lutar-Skerbinjek, 2018; Musleh Al-Sartawi & Reyad, 2018). According to Campbell and Shrives (2001), the ST suggests that information asymmetry in the capital market leads to companies voluntarily disclosing information to the public in excess of what is typically mandated by law and other regulations in order to signal that they are better than others and in this way they would be able to attract the right attention and maintain a more favourable reputation among potential investors (Khalil & Maghraby, 2017). Voluntary web-disclosure is therefore considered an efficient means for management to signal firms' performance and governance to outside investors that they are better (Khalil & Maghraby, 2017).

Voluntary Web-Disclosure Practices

Given the influence of the Internet in almost every aspect of life, there is a need for organisations to take full advantage of company websites to disclose information and reduce asymmetry. Regulatory agencies in many countries appear to be increasing measures to standardize web-reporting practices so there is some degree of alignment and precision (Boubaker et al., 2011; Sandhu & Singh, 2019).

The call for improving web-disclosure practices relates to the assertion that proper disclosure reflects good corporate governance and transparency (López-Arceiz et al., 2019; Al Sawalqa & Al-Msiedeen, 2021). When the potential of web-disclosure is fully realised, it has the potential of replacing traditional modes of disclosure such as annual reports (Botti et al., 2014; Bowrin, 2015; Sandhu & Singh, 2019). Indeed, web-disclosure improves the ability of companies to provide timely information (Ahmed et al., 2017), enhance accessibility to information globally (Ahmed et al., 2017; Bowrin, 2015; Kiliç, 2016), and promote greater comprehension of information (Abdi et al., 2018; Ahmed et al., 2017; Bowrin, 2015; Sandhu & Singh, 2019).

The adoption of web-disclosure practices as an alternative for communicating information has steadily gained momentum (Botti et al., 2014; Jones & Xiao, 2004); however, the practice remains largely voluntary in nature (Djajadikerta & Trireksani, 2012; Nair et al., 2022). This is

primarily because web-disclosure is still under regulated and not audited professionally (Botti et al., 2014; Kelton & Yang, 2008). Consequently, there are significant variations in the quality of web-disclosures (Botti et al., 2014; Boubaker et al., 2011; Djajadikerta & Trireksani, 2012). Boubaker et al. (2011) for example observed that web-disclosures vary greatly and information is still limited to financial performance. Companies also encounter some obstacles which hinder the companies to enhance quality of web-disclosure, namely competition, cost and audit issues (Al Sawalqa & Al-Msiedeem, 2021).

Research Context – Indonesia

Indonesia served as the site of the study and offers a unique setting for investigating web-disclosure practices. In 2015, OJK as a regulatory body in the Indonesia capital market issued guidelines on the web-disclosure practices of public-listed companies. The guidelines were an attempt at regulating disclosure practices and increasing transparency which meets the demands for access to information among investors and other stakeholders.

Specifically, the new OJK regulations required all listed companies to disclose certain information on their websites. The OJK prescribed that this information included general information, investor-related information, as well as corporate governance and corporate social responsibility information. Lists of information items for each of these broad themes were provided in the guidelines. The implementation of this regulation has shaped the web-disclosure practices of public listed companies in Indonesia, the most significant of which is that web-disclosure is not completely voluntary anymore. Some information disclosed by companies are now mandatory disclosures regulated by the OJK.

This move towards regulating the web-disclosure practices partially serves to address issues and challenges in the Indonesian stock market which remains unaddressed relating to market liquidity and market concentration (Rowter, 2016). Further, the introduction of regulation in web-disclosure was another step forward to encourage good corporate governance and augment investor awareness (Sandhu & Singh, 2019). Much improvement in web-disclosure not merely increases dissemination of corporate information but also improves credibility and accountability of information disclosed

by companies which then raises investor confidence and boosts the capital market (Boubaker et al., 2011).

METHOD

Framework of Voluntary Corporate Web-Disclosure Index

The construction of the VWDI began with an extensive review of literature to ascertain the limitations of web-disclosure practices. The entire website was considered as the disclosure of information may take place anywhere within a website. However, links extending beyond an organisation's website was regarded as beyond web-disclosure practices.

In the development of the VWDI, themes and items were included based on investigations in previous studies by Boubaker et al. (2011), Michelon et al. (2015), Sarhan and Ntim (2018) and Shivaani et al. (2019) as well as internationally acknowledged standards such as the GRI reporting framework and the ASEAN corporate governance scorecard. The items were then reassessed against the OJK guidelines to ensure consistency. Items which were deemed as a mismatch with the Indonesian context were excluded. The final version of the web-disclosure index composed 44 items, presented under two main sections, namely content information (34 items) and presentation format (10 items).

The content section focused on the information provided on websites and were made up of four categories, namely general information (2 items), financial information (4 items), corporate governance information (18 items), risk information (1 item) and corporate social responsibility information (9 items). The presentation format section which adds value and quality to web-disclosure is composed of 5 user-friendly and technology items, as well as, 5 items for timeliness.

In conceiving the VWDI, a coding system was also developed. Most of items were coded based on a dichotomous scale to check for the presence or absence of the items on company websites. A total of 35 items (consisting of 25 content items and 10 presentation items) were scored using a dichotomous scale. The use of a dichotomous scale allows for the measurement of total

quantity or the variety of information in websites, and this indicates the effort put into providing relevant information on websites.

However, it was noted that total quantity is not a valid proxy for disclosure quality in its entirety (Jia et al., 2016). To address this limitation, the remaining 8 items on risk information and corporate social responsibility were coded by using semantic properties, following the work of Beretta and Bozzolan (2004) and Shivaani et al. (2019) for risk disclosure and the work of Bouten et al. (2011) and Michelon et al. (2015) for corporate social responsibility (CSR). The application of semantic properties led to the use of an ordinal scale instead of a dichotomous scale for the 8 items, with the range score for 0-9 points for risk disclosure and 0-4 points for CSR disclosure. According to Jia et al. (2016)), an analysis based on the semantic properties of content provides a richer profile of corporate disclosure because the analysis offers precise and detailed information for further analysis. The list of items including the range of scores for web-disclosure is presented in **Table 1**.

Table 1: Web-Disclosure Index

| Dimension of VWDI | Categories of the Dimension | Types of Score | Number of firms | % of firms |
|---|---|-----------------------------|-----------------|------------|
| Content Information (34 items) | General information (2 items) | Dichotomous score | 8 | 27% |
| | Financial information (4 items) | Dichotomous score | 20 | 67% |
| | Corporate governance (18 items) | Dichotomous score | 13 | 43% |
| | Risk information (1 item) | Ordinal Score | 10 | 33% |
| | Corporate social responsibility (9 items) | Dichotomous & ordinal score | 17 | 56% |
| Presentation Format Features (10 items) | Convenience (2 items) | Dichotomous score | 17 | 56% |
| | Technology (3 items) | Dichotomous score | 9 | 30% |
| | Timeliness (5 items) | Dichotomous score | 11 | 36% |

Table 2: Semantic Properties

| Semantic Properties | Sub-group of semantic properties | Coding System | Max. Score |
|--|---|---------------|------------|
| Quantification | Qualitative information (QL) | 1 | 2 |
| | Quantitative information (QN) | 2 | |
| Time-orientation | Past/backward looking (P) | 1 | 3 |
| | Forward looking (F) | 2 | |
| | Past/backward & forward looking (PF) | 3 | |
| Tone | Neutral tone (N) | 1 | 4 |
| | Good tone (G) | 2 | |
| | Bad/ negative tone (B) | 3 | |
| | Bad and good tone (BG) | 4 | |
| CSR specific information ("vision and goals/VG"; "management approach/MP"; "performance indicators/PI") | 1 of 4 information (VG, MP, qualitative PI and quantitative PI) is disclosed | 1 | 4 |
| | 2 of 4 information (VG, MP, qualitative PI and quantitative PI) is disclosed | 2 | |
| | 3 of 4 information (VG, MP, qualitative PI and quantitative PI) are disclosed | 3 | |
| | 4 of 4 information (VG, MP, qualitative PI and quantitative PI) are disclosed | 4 | |

Coding Semantic Properties for Risk Disclosure

Semantic properties of risk disclosure items were coded on the basis of their level of quantification (1-2 points), time-orientation (1-3 points) and tone (1-4 points) as shown in **Table 2**. The maximum score for risk disclosure was 9 points.

In the context of the present study, quantification focussed on whether web-disclosure contains references to financial terms, such as cash flow, ratios, profits, etc. It is suggested in previous studies that inclusion of financial terms improves the quality of the disclosures and assists stakeholders in assessing company performance (Beretta & Bozzolan, 2004; Jia et al., 2016). Following a study by Shivaani et al. (2019) (Shivaani et al., 2019), we ascribed semantic property for quantification to both “non-financial” and “financial” elements with a range of 1-2 points. If the web-disclosure of a content item was only made up of qualitative information, then the

item was awarded one point. On the other hand, if the disclosure embodied financial elements, then the item was awarded two points.

Another semantic property was time-orientation, with web-disclosure scored up to three points. Specifically, a score of one was awarded if the disclosure only contained information about the past. Two points were given if the narrative disclosure only contained information about the future while three points were given for disclosures which provided information about both the past and the future. Information about the future was given a higher score because it is considered to be more valuable for investors who want to assess future performance and risks (Jia et al., 2016). Providing historical information tends to be easier for managers compared to the uncertainty of future projections and claims. However, it is the latter which stakeholders rely on to make informed decisions (Al-Najjar & Abed, 2014; Jia et al., 2016). Al-Najjar and Abed (2014) suggested that inclusion of forward-looking information in company reports makes them more informative and useful for investors to predict or anticipate future earnings.

Following studies by Elgammal et al. (2018) and Wang and Hussainey (2013), the present study undertook a search of keywords to identify the presence of forward-looking statements. A search was carried out for lexical items such as accelerate, anticipate, await, coming (financial) year(s), and coming months. Meanwhile, historical information is regarded as present if the disclosure provided information or analysis based on past events (Beattie et al., 2004).

Guided by the work of Beretta and Bozzolan (2008), Jia et al. (2016) and Shivaani et al. (2019), tone of disclosure were categorised as neutral tone, good tone and bad tone. Companies are expected to provide both positive and negative information which is considered to be more useful compared to information with a neutral tone (Jia et al., 2016). However, companies are found to prefer providing either positive or negative news rather than both (Jia et al., 2016; Shivaani et al., 2019). Further, it is concluded that organisations are likely to avoid disclosing negative or bad news as a way to signal “good news” and “effectiveness” to the market (Kothari et al., 2009). Therefore, following Shivaani et al. (2019), the present study coded tone as neutral (1 point), good tone (2 points), bad tone (3 points) and good and bad tones (4 points).

To mitigate subjectivity, tone of the disclosure whether neutral, good, or bad was coded based on a list of keywords. The list of keywords is useful in guiding judgements (Schleicher & Walker, 2010). This study used the list of keywords for tone which have been suggested by Bassyouny et al. (2020), Loughran and McDonald (2011) and Schleicher and Walker (2010).

In sum, an item of risk disclosure was coded on an ordinal scale with the range of points of 0-9. A score of 0 is coded if that risk information was not available on the company website. In contrast, a score of 9 implied complete risk disclosure information containing all qualitative characteristics, namely, quantitative information, backward and forward-looking information, bad and good tone (2 points+3 points+ 4 points = 9 points).

Coding Semantic Properties for Corporate Social Responsibility Disclosure

Semantic properties for items of corporate social responsibility (CSR) were coded on the basis of specific CSR disclosure (0-4). The maximum score for items of CSR was 4 points. Previous studies have suggested that CSR disclosure should present comprehensive information which not only provides statements of commitment but also elaborate on the compliance of the commitments and the achieved outcomes so it helps stakeholders to assess social and environmental performance and levels of accountability (Bouten et al., 2011; Robertson & Nicholson, 1996). Bouten et al. (2011), Michelon et al. (2015) and Vuontisjarvi (2006) developed frameworks to gauge levels of comprehensive CSR disclosure by recording the presence of vision and goals (VG), management approach (MP) and performance indicators (PI).

VG is related to information on stated aims or values. This includes statements on corporate recognition of the values of CSR and corporate commitment to engage in CSR. Management approach (MA) is associated with CSR programs and policy which highlight the action or practice adopted by companies to address a given CSR issue. Finally, performance indicators provide information for actual CSR achievements which can be shown in qualitative or in quantitative measures. Qualitative indicators refer to CSR achievements reflected in awards, public recognition, external image surveys, etc., while quantitative indicators are quantitative outcomes reflecting effective management approaches related to CSR activities.

Regarding the scoring of CSR specific information, the semantic property was scored by summing up the presence of specific types of information (VG, MP, qualitative PI and quantitative PI) on CSR disclosure. The same applied to items of risk disclosure or items of CSR disclosure which were coded on an ordinal scale. To illustrate, items of CSR disclosure was scored with a value of 0 if the item is not presented on the company website. If CSR disclosure only provided 2 of 4 types of information, the CSR disclosure item was scored 2 points. The maximum score for semantic property in relation to CSR specific information was 4 points which means that the companies provided comprehensive information covering both general and specific information.

RESEARCH DESIGN

Sample Selection

The sample for this study was the largest 40 companies ranked based on the market capitalisation listed in the Indonesia Stock Exchange (IDX) as of 31 December 2019 with the population consisting of 745 companies. The selection of the largest companies as sample for the study is consistent with prior studies which investigated corporate disclosure practices at the early stage, such as Kaur and Kaur (2020), Singh and Singh (2019), Sadou et al., (2017) and Davey and Homkajohn (2004). The largest 40 representing 5 per cent of total listed companies in Indonesia comprised 70 per cent of the total market capitalization on this date. Next, financial companies were excluded because of the different regulations adopted by financial companies compared to non-financial ones. As a result, 10 companies were not included in this study leaving 30 companies which was still considered sufficient and efficient for most quantitative studies (Sekaran & Bougie, 2016). Conclusion in this study, however, is restricted to large company disclosure and it may not apply to medium and small-sized publicly traded companies.

The company websites were accessed through links which were made available on the IDX website. Data collection was carried out between September 2020 and October 2020. Data on firm characteristics, such as firm size, leverage, age and profitability, were collected from the Refinitiv Eikon database and annual reports for the year 2019 which were downloaded from the company websites.

Data Analysis Method

To answer RQ1, scores were determined using the VWDI to analyse the layers of information presented in each corporate website. The list of items and scoring system is shown by Table 1 and Table 2. The accumulated score based on the VWDI was taken to represent the extent of voluntary web-disclosure. The maximum possible score would be 76 points (35 items on a binary score for content and presentation; 1 item on an ordinal scale for risk disclosure with a maximum score of 9 ($1 \times 9 = 9$); and 8 items on an ordinal scale for CSR information with a maximum score of 4 each ($8 \times 4 = 32$)).

To answer RQ2, companies were divided into three categories based on firm-characteristics, namely size, leverage, and profitability and age. Firm size was divided into three categories, small (bottom 25 percent in quartile 1), mid (falling in either quartile 2 or quartile 3), and large (top 25 percent in quartile 4). Guided by the works of Boubaker, Lakhal, and Nekhili (2011), Chong and Rahman (2020), and Uyar (2011), companies were regrouped into 3 industries, namely the (i) environmentally low-sensitive industry (i.e. ICT, retail, and service industries), (ii) environmentally moderately-sensitive industry (i.e. manufacturing, construction and real estate industries), and environmentally highly-sensitive industry (agriculture, mining, energy, basic material and chemicals industries). The differences in scores based on the VWDI were analysed against the various categories using a one-way ANOVA test. The same method was also applied for other firm characteristics (leverage, profitability and age) and nature of industry.

Reliability of Coding

Coding reliability is dependent on the coded data constructed through a content analysis (Bouten et al., 2011). A coding structure and rules are necessary in order to help multiple coders assess semantic properties consistently across samples. To ensure coding reliability, a pilot study was conducted for 5 websites from the sample which were selected randomly. The websites were, then, scored again to assess consistency with the original scoring. Further, following Abdi et al. (2018), the Cronbach's coefficient α measuring inter-items correlation was used and calculated. The web-disclosure index was found to have a Cronbach's α higher than 0.7 indicating that the web-disclosure index was reliable.

RESULTS AND DISCUSSION

Descriptive Statistics of Sample Study

The companies which made up the sample were grouped based on industrial classification set by the Indonesia Stock Exchange. This is presented in the **Table 3**.

Table 3: Description of Sample of the Study

| Industry | Frequency | Percent | Cumulative |
|------------------------|-----------|---------|------------|
| Basic Materials | 5 | 16.67% | 16.67% |
| Consumer non-cyclicals | 9 | 30.00% | 46.67% |
| Energy | 5 | 16.67% | 63.33% |
| Infrastructure | 5 | 16.67% | 80.00% |
| Miscellaneous | 6 | 20.00% | 100.00% |
| Total | 30 | 100.00% | |

The analysis revealed that the top 30 non-financial companies were dominated by those in the consumer non-cyclicals (30.00%). Several companies in the sample belonged to the basic materials industry (16.67%), followed by others in energy (16.67%) and infrastructure (16.67%). Another 20% of total sample were grouped as miscellaneous, representing those which belonged to properties and real estate, and health care.

Panel A in Table 4 below reveals the total score (tscore) for voluntary web-disclosure based on the VWDI while Panel B shows the total score (tscore) for both content and presentation. It is exhibited that voluntary web-disclosure practice was still at the early stage.

Disclosure of Frequency

Table 4: Descriptive Statistics of Voluntary Web-Disclosure Index (VWDI)

| Panel A | N | Score range | Min | 1 st quartile | Mean | Mdn | 3 rd quartile | Max | S.D. | Skewness | Kurtosis |
|------------------------|----|-------------|------|--------------------------|-------|-------|--------------------------|-------|-------|----------|----------|
| cscore | 30 | 0-66 | 3.00 | 19.00 | 25.67 | 26.00 | 30.00 | 49.00 | 10.76 | -0.44 | 2.83 |
| pscore | 30 | 0-10 | 1.00 | 2.00 | 3.80 | 3.50 | 5.00 | 10.00 | 2.11 | 0.89 | 3.82 |
| tscore | 30 | 0-76 | 5.00 | 23.00 | 29.47 | 30.50 | 35.00 | 52.00 | 11.41 | -0.24 | 2.67 |
| Panel B | N | Score range | Min | 1 st quartile | Mean | Mdn | 3 rd quartile | Max | S.D. | Skewness | Kurtosis |
| Content Dimension | | | | | | | | | | | |
| GI | 30 | 0-2 | 0.00 | 0.00 | 0.50 | 0.50 | 1.00 | 1.00 | 0.51 | | |
| FI | 30 | 0-4 | 0.00 | 2.00 | 2.70 | 2.00 | 4.00 | 4.00 | 1.29 | | |
| CG | 30 | 0-17 | 1.00 | 5.00 | 7.20 | 7.50 | 9.00 | 15.00 | 3.10 | | |
| RISK | 30 | 0-10 | 0.00 | 0.00 | 2.47 | 1.00 | 4.00 | 10.00 | 3.13 | | |
| CSR | 30 | 0-33 | 0.00 | 6.50 | 12.80 | 14.00 | 18.00 | 29.00 | 7.45 | | |
| Presentation Dimension | | | | | | | | | | | |
| CONV | 30 | 0-2 | 0.00 | 1.00 | 1.10 | 1.00 | 2.00 | 2.00 | 0.71 | | |
| TECH | 30 | 0-3 | 0.00 | 0.00 | 0.93 | 1.00 | 1.75 | 3.00 | 0.86 | | |
| TIME | 30 | 0-5 | 0.00 | 1.00 | 1.77 | 1.50 | 2.00 | 5.00 | 1.35 | | |

Notes: Panel A displays descriptive statistics of voluntary disclosure score on company website. cscore is total score for content items, pscore is total score for presentation items, and tscore is total score for all the 44 disclosure items. Panel B exhibits descriptive statistics of sub-category of two categories (content and presentation). GI is total score for general information, FI is total score for financial information, CG is total score for corporate governance information, RISK is total score for risk information, CSR is total score for corporate social responsibility information, CONV is total score for convenience aspect, TECH is total score for technology aspect, and TIME is total score for timeliness aspect disclosed only under company website.

The average tscore for the top 30 listed companies in Indonesia was 29.47, which is far below the full score of 76.00 based on the VWDI. Further, it was also found that the highest score attained was only 49.00 while the lowest was just 5.00. Standard deviation of the total score was relatively high for 11.41. These statistics indicated a wide variation in the web-disclosure practices across the top 30 companies listed in the IDX. The finding appear consistent with prior studies which showed greatly different levels of web-disclosure practices across companies in Indonesia (Adityawarman & Khudri, 2018), in Middle Eastern countries (Abdi et al., 2018), in India (Sandhu & Singh, 2019) and in the developed countries (Boubaker et al., 2011).

The content score (cscore) and presentation score (pscore) were found to be similar to the total score based on the VWDI; however, the mean of the content and presentation scores were significantly lower. The content score and presentation score were just 25.67 and 3.80 respectively, out of a maximum score of 66 for content, and 10 for presentation. The finding is consistent with that reported by Boubaker et al. (2011) which demonstrate that wide variation in total score of web-disclosure because of a great different scores across sample companies for both sections, content section and presentation section. Slightly different from this study, Abdi et al. (2018) reported that wide variation was found in the disclosure content on the companies' website but there was no significant difference in the forms of presentation score across companies sampled.

Data in panel B of Table 4 suggests that the top 30 non-financial companies listed in the IDX were effective in voluntarily disclosing their financial information (FI) on their websites. It was found that the top 25% of the companies achieved the maximum score of 4.0 points for financial information (FI). The average FI score was relatively high at 2.7 points. This finding is consistent with those reported by Boubaker et al. (2011), Sandhu and Singh (2019) and Uyar (2011) demonstrating that financial information is the most commonly information disclosed on companies' website. Following closely behind were scores for disclosure of corporate governance (CG) and corporate social responsibility (CSR) information. The maximum score for CG and CSR were 17 and 33 points respectively, while the average for the two was 7.2 for CG and 12.80 for CSR. Prior studies of Boubaker et al. (2011) Djajadikerta and Trireksani (2012) and

Kilic (2016) and Uyar (2011)), however, found that CG and CSR disclosure were less available, even tended to be low, on company websites. This contradictory finding indicates that there seems to be an improvement in the online CG and CSR reporting made by companies. Further, it was found that the top 30 companies listed in the IDX were least successful in risk information disclosure. Few companies seemed to disclose risk information on their websites and even fewer provided risk information comprehensively. As is evident in Panel B of Table 4, while the maximum score for risk disclosure (RISK) was a full score of 10, the average score of the top 25% (3rd percentile) was just 4 points. Also, the mean score for risk disclosure was just 2.47, with companies in the bottom 25% even scoring 0. These results are in sharp contrast to risk reporting frequencies reported by Elgammal et al. (2018) and Shivaani et al. (2019) with regard to risk disclosure on annual reports. Shivaani et al. (2019) showed that 100 percent of Indian companies sampled provided risk disclosure in annual reports. These statistics may indicate that risk disclosure on websites is still rather new to Indonesian companies.

In terms of presentation, it was found that the level of convenience and technology among the top 30 companies tended to be high, with little variations. This finding is contrast with Adityawarman and Khudri (2018) that there are still many companies in Indonesia which have not utilized internet technology. However, it appears that the timeliness of web-disclosure needs to improve. While there was evidence that some companies do place importance on the timely disclosure of information, panel B in Table 4 shows that even the score for the top 25% (the 3rd quartile) was only 2 points. Furthermore, the average score for timeliness was relatively low, with a score of 1.77. This finding is consistent with those reported by Abdelsalam and Street (2007) and Sandhu and Singh (2019) that the company websites are still lagging behind with regard to the timeliness dimension. This indicates that there is room for improvement in company websites in connection with the timeliness dimension.

Disclosure Richness

An examination of semantic properties is necessary to understand the richness of web-disclosure. In this study, we examined the semantic properties of risk and corporate social responsibility (CSR) disclosures.

CSR disclosure was analysed based on eight themes presented in the GRI Sustainability Reporting Standards 2020, namely 1) economic performance, 2) fair business practices, 3) energy and water in production process, 4) emission and waste, 5) labour practices, 6) human rights, 7) support for community programmes, and 8) product responsibility.

Table 5: Results of Semantic Properties for Risk Disclosure

| Content Disclosure | Number of firms disclose | % of firms disclose to total sample |
|---------------------------------|--------------------------|-------------------------------------|
| RISK DISCLOSURE | | |
| Quantification | | |
| Qualitative | 9 | 30.00% |
| Quantitative | 1 | 3.33% |
| Total number of firms disclose | 10 | 33.33% |
| Time Orientation | | |
| Past/backward looking | 0 | 0.00% |
| Forward looking | 4 | 13.33% |
| Past and forward looking | 6 | 20.00% |
| Number of firms disclose | 10 | 33.33% |
| Tone | | |
| Neutral Tone | 2 | 6.67% |
| Good Tone | 0 | 0.00% |
| Bad/Negative Tone | 2 | 6.67% |
| Good and Bad Tone | 4 | 13.33% |
| Number of firms disclose | 8 | 26.67% |

Table 5 reveals that 10 out of 30 companies disclosed risk information on their websites. Among the 10 companies, 9 companies provided descriptions of non-financial performance (qualitative reporting) through their websites while financial figures related to risk disclosure (quantitative reporting) was only disclosed by one company. Evidence was also sought for time orientation. It was found that 4 out of 10 websites made references to only forward looking information while 6 out of 10 companies presented both backward-looking and forward-looking information. An examination of sentences reporting risk disclosure revealed that they contained both positive and negative tones. Two of eight websites made use of just negative tones when disclosing risk while another 4 made use of both good and bad tones in their risk disclosure. Appendix 1 contains illustration on coding risk items.

The findings as shown by Table 5 is consistent with those reported by (Shivaani et al., 2019) showing that most of risk disclosures made in annual report by Indian companies are qualitative in nature with backward as well as forward looking information and bring out bad news (either alone in combination with good news) rather than only good news. The implication of this finding is that a considerable number of Indonesian companies need to substantially improve their risk disclosure on their websites.

While risk disclosure practices were minimal, 29 out of the 30 companies presented CSR information on their websites. However, the CSR disclosure appeared to narrowly focus on information related to community support programs while information on other CSR themes were under-disclosed. This is an observation which is consistent with Djajdikerta and Trireksani (2012) who also found that Indonesian companies focused on reporting their community programs as part of their CSR disclosure practices. Following community program reporting practices, a healthy number of company websites were found to report on emissions and waste (22 of 30 companies) and labour practices (21 of 30 companies). Meanwhile, few companies (less than 30%) presented information pertaining to fair business practices and human rights. Appendix 1 contains illustration on coding CSR items. The finding is consistent with Bouten et al. (2011) showing a few Belgian companies (merely 10.2% of total sample) disclosing some human rights information in their annual report. These statistics may indicate that there is still a room for improvement regarding CSR disclosures made by Indonesian companies on their websites.

Table 6: Results of Semantic Properties for Corporate Social Responsibility Disclosure

| CSR Disclosure | Economic performance | | Fair business practice | | Energy and water in process | | Emission and waste | | Labour practices | | Human rights | | Support for community program | | Product responsibility | |
|-------------------------------------|----------------------|------------|------------------------|------------|-----------------------------|------------|--------------------|------------|------------------|------------|--------------|------------|-------------------------------|------------|------------------------|------------|
| | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| Vision and Goals | 11 | 37% | 5 | 17% | 11 | 37% | 20 | 67% | 18 | 60% | 5 | 17% | 26 | 87% | 11 | 37% |
| Management Approach | 12 | 40% | 7 | 23% | 13 | 43% | 21 | 70% | 20 | 67% | 6 | 20% | 29 | 97% | 13 | 43% |
| Qualitative Performance Indicators | 0 | 0% | 0 | 0% | 2 | 7% | 4 | 13% | 6 | 20% | 1 | 3% | 0 | 0% | 3 | 10% |
| Quantitative Performance Indicators | 8 | 27% | 1 | 3% | 6 | 20% | 10 | 33% | 10 | 33% | 3 | 10% | 17 | 57% | 5 | 17% |
| Total firms disclose | 15 | 50% | 8 | 27% | 16 | 53% | 22 | 73% | 21 | 70% | 6 | 20% | 29 | 97% | 14 | 47% |

As shown in Table 6, CSR disclosure on the company websites was dominated by information about management approach, followed by information on vision and goal. On the contrary, information on performance indicators was disclosed by few companies. Among the few companies disclosing information on performance indicators, it was found that there was a preference to provide quantitative rather than qualitative information. Appendix 2 contains illustration on coding CSR items.

This finding is consistent with prior studies gauging and analysing CSR reporting including Djajadikerta and Trireksani (2012) for Indonesian context, Michelin et al. (2015) for UK context, and Bouten et al. (2011) for Belgian context. Djajadikerta and Trireksani (2012) found that the nature of the CSR disclosure made by Indonesia companies was mostly declarative.

Normality Test for Voluntary Web-Disclosure Index

A normality test was conducted to ascertain if the VWDI scores were distributed normally. This was to determine which test should be applied to examine the effects of firm characteristics on the quality of voluntary web-disclosure (VWDI). Normal distribution would suggest the use of a one-way ANOVA parametric test. Otherwise, a non-parametric test such as Kruskal-Wallis test should be applied.

Table 7: Results of Shapiro-Wilk W Test and Shapiro-Francia W Test for Normal Data of VWDI

| Variable | N | Shapiro-Wilk W test | | Shapiro-Francia W test | |
|----------|----|---------------------|---------|------------------------|---------|
| | | Z-score | Prob>Z | Z-score | Prob>Z |
| cscore | 30 | -1.575 | 0.94240 | -1.287 | 0.90088 |
| pscore | 30 | 1.302 | 0.09639 | 0.696 | 0.24332 |
| tscore | 30 | -1.145 | 0.87379 | -1.139 | 0.87265 |

Notes: cscore is total score for content items; pscore is total score for presentation items; tscore is total score for all the 41 disclosure items.

Table 7 shows the result of the normality test for the VWDI scores. It was found that the VWDI scores were distributed normally (Prob>Z higher than 0.05) for both the Shapiro-Wilk W test and Shapiro-Francia W Test. This indicated that the ANOVA test should be run.

Significance Differences between VWDI scores and Firm Characteristics Using One-Way ANOVA Analysis

Each firm characteristic was grouped into three categories based on percentile of the characteristic data. For example, the asset size of companies was grouped into 3 categories - small companies (bottom 25 percent/ quartile 1), mid-size companies (quartile 2 and quartile 3) and large companies (top 25 percent/ quartile 4). The same method of grouping was replicated for the characteristics of leverage, profitability and company age. However, grouping based on the nature of the industry was based on the degree of environmental sensitivity.

Table 8: Results of One-Way ANOVA Analysis

| Firm Characteristics | N | Total score of VWDI | | | | | |
|----------------------|----|---------------------|-------|------------------------|----------|-------------|-------------------------------|
| | | Mean | SD | One-way ANOVA analysis | | | |
| | | | | F-Stat | P-Values | Results | Prob>Chi2 for Bartlett's test |
| Firm Size | | | | | | | |
| Small | 8 | 20.12 | 11.90 | | | | |
| Mid-Size | 15 | 32.86 | 10.25 | 4.55 | 0.019 | Ho rejected | 0.582 |
| Large | 7 | 32.85 | 7.73 | | | | |
| Liabilities | | | | | | | |
| Low | 8 | 22.87 | 15.48 | | | | |
| Average | 15 | 31.60 | 9.73 | 1.95 | 0.161 | Ho accepted | 0.129 |
| High | 7 | 32.42 | 6.99 | | | | |
| Profitability | | | | | | | |
| Low | 8 | 21.12 | 15.05 | | | | |
| Average | 15 | 31.53 | 6.90 | 3.65 | 0.039 | Ho rejected | 0.054 |
| High | 7 | 34.57 | 10.93 | | | | |
| Company Age | | | | | | | |
| Young | 8 | 21.75 | 12.76 | | | | |
| Middle | 15 | 30.93 | 10.15 | 3.26 | 0.054 | Ho accepted | 0.622 |
| Old | 7 | 35.14 | 8.72 | | | | |
| Industry Type | | | | | | | |
| Low sensitivity | 7 | 19.71 | 8.19 | | | | |
| Mildly sensitive | 13 | 30.53 | 10.86 | 4.71 | 0.017 | Ho rejected | 0.75 |
| Highly sensitive | 10 | 34.90 | 10.42 | | | | |

Table 8 provides the mean score for the sub-categories of each firm characteristic. The Table also shows the results of a significance test based on the one-way-ANOVA analysis. It is evident that the mean of the VWDI score increased when the asset size, liability level, profitability level and company age increased. For instance, it was found that small companies had a mean of 20.12, compared to mid-sized and large companies which had a mean of 32.86 and 32.85 respectively. The same pattern emerged for liability, profitability and company age. Regarding industry type, it was found that companies belonging to an industry with low environment sensitivity had the lowest level of voluntary web-disclosure with a mean score of 19.71. In comparison, companies in mildly sensitive industries had a higher score of VWDI, while companies belonging to highly sensitive industries had the highest mean score. This result supports an argument that highly sensitive industries tend to have higher incentive for better governance practices including higher disclosure and transparency reflected by higher quality of voluntary web-disclosure because of higher public and regulatory scrutiny (Sethi et al., 2016; Yanuardi et al., 2021).

In addition, the results of the one-way ANOVA analysis as shown in Table 8 also shows that differences in mean score for each sub-group of firm characteristics were statistically significant. P-values were used as a basis to examine significance. When p-values were equal to or lower than 0.05, differences in the mean score based on the VWDI was found to be significant. It was found that p-values for asset size, profitability and environmental sensitivity were lower than 0.05. P-value which is lower than 0.05 leading to the rejection of the H_0 .

The results indicated that VWDI score of large and middle-size were significantly different from that of small-size companies. This study is consistent with empirical studies related to web-disclosure practices in developing countries by Abdi et al. (2018), Sandhu and Singh (2019) and Uyar (2011) and in developed countries by Kaur and Kaur (2020), Basuony et al. (2018) and Sarea (2020). The result supports the AT suggesting that larger firms are more likely to supplement traditional financial reporting mechanisms with web-disclosure in order to benefit from improving transparency and decreasing agency costs (Abdi et al., 2018; Boubaker et al., 2011; Jensen & Meckling, 1976).

The same as firm size, results of profitability in one-way ANOVA analysis indicated that there are statistically significant difference among VWDI score of different groups of profitability levels. This finding is not consistent with prior studies by Kaur and Kaur (2020), Abdi et al. (2018), Basuony (2018), Sandhu and Singh (2019), but support study of Sarea (2020) and the ST suggesting that profitable firms have incentives to disclose more information to the public as they use this positive performance as an instrument to signal their quality to their stakeholders (Dey et al., 2020). Besides, a statistically significant difference was also found among group of industries. This finding is consistent with prior studies by Aly et al., (2010), Sandhu and Singh (2019), Shivaani et al., (2019) and Uyar (2011) suggesting that industry type is important determinant of web-disclosure.

On the contrary, the p-values of liability and company age were higher than 0.05; therefore, H_0 was accepted. The acceptance of H_0 indicates that there is no statistically different VWDI score among group of liability level and among group of company age. This finding is consistent with studies by Aly et al. (2010) and Boubaker et al. (2011)) but not consistent with prior studies by Sarea (2020), Abdi et al. (2018), and Sandhu and Singh (2019). Prob>chi2 for Barlett's test which is also presented in Table 8 shows that variances among categories for all firm characteristics tested were the same; therefore, the results of ANOVA analysis were not biased.

CONCLUSION

Web-disclosure is important for good corporate governance as the practice promotes corporate transparency and accountability which in turn increases investor confidence (Nel & Baard, 2019; Sandhu & Singh, 2019). There is therefore a call for improvement in quality web-disclosure as it offers companies advantages which cannot be realised through traditional print-based disclosure practices (López-Arceiz et al., 2019). More specifically, the implementation of web-disclosure regulations in Indonesia and the analysis presented in this paper suggests that while companies appear to be adhering to the demands of regulatory agencies for efficient reporting practices, there are issues with the richness of disclosures. It appears that while boxes may be checked for corporate web-disclosure when searching for the presence of mandatory and voluntary items, the richness with which

information is disclosed remains questionable (Jia et al., 2016; Shivaani et al., 2019).

The multidimensional framework employed by Beretta and Bozzolan (2008), Bouten et al., (2011), Jia et al. (2016), Michelon et al. (2015) and Shivaani et al. (2019) has certainly improved the way disclosure is measured. This is primarily because of the focus on qualitative dimensions expressed through semantic properties within items that lend to a more comprehensive and precise measurement of disclosures.

To support the analysis undertaken in the present study, the VWDI was conceived to capture quantitative evidence in web-content and presentation, and also to examine the semantic properties of those disclosed items. The index was informed by existing universally recognised frameworks, namely the GRI framework and the ASEAN Corporate Governance scorecard which is particularly relevant for policy-makers, investors and stakeholders who call for corporate transparency and greater web-disclosure.

The results of the present study support the conclusions of Djajadikerta and Trireksani (2012) who asserted that web-disclosure practices in Indonesia were poor and still at the infancy stage, and the observations of Adityawarman and Khudri (2018) who opined that few companies in Indonesia have optimized the use of their websites for efficient disclosure. While the hope is that new regulations in Indonesia will result in greater web-disclosure among companies in Indonesia, the findings of the present study draws attention to the question of how the richness of such practices needs to be examined. Beyond a search for the presence or absence of mandatory items, there is clearly a need to focus on the richness of voluntary web-disclosure to understand the true appreciation of transparent reporting practices by corporate entities. A push towards universal best practices in web-disclosure could lead to greater stakeholder confidence and increased investments in Indonesia's capital market.

The findings of the present study in terms of richness of disclosure were similar to studies conducted in other parts of the world (Buckby et al., 2015; Shivaani et al., 2019) where an examination of semantic properties revealed a focus on forward looking information and the use of a negative tone. Furthermore, CSR disclosures provided by companies on their websites

were dominated by information about vision and goals and management approaches, with little information on performance indicators.

The one-way ANOVA results confirm statistically significant differences in the quality of voluntary disclosure across firm size, profitability and environmental sensitivity. The results confirm postulations of the AT and the ST which suggest that voluntary web-disclosure is often a mechanism for companies to reduce agency costs, with benefits of web-disclosure likely increasing with firm size (Abdi et al., 2018; Basuony et al., 2018; Boubaker et al., 2011; Sandhu & Singh, 2019; Shivaani et al., 2019; Uyar, 2011).

Inevitably, subjectivity inherent in conducting semantic analysis in the measurement of voluntary web-disclosure is hard to be fully eliminated (Jia et al., 2016; Shivaani et al., 2019). However, at the same time, the adoption of semantic content analysis is considerably useful to capture the richness of corporate disclosure which in turn provides a comprehensive portrayal of web-disclosure practices (Jia et al., 2016). The uses of semantic content analysis should therefore feature in future studies in the area. The present study was limited to an exploratory analysis. The determinant factors of the quality of web-disclosures are still unclear and should be the site of future investigations. Future research could therefore extend on the present study by increasing the sample size to investigate determinant factors for the quality of web-disclosure using multivariate analysis. Researchers may also want to consider the examination of web-disclosure practices across different countries which are guided by different regulations.

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REFERENCES

- Abdelsalam, O. H., & Street, D. L. (2007). Corporate governance and the timeliness of corporate internet reporting by UK listed companies. *Journal of International Accounting, Auditing and Taxation*, 16(2), 111-130.
- Abdi, H., Kacem, H., & Omri, M. A. B. (2018). Determinants of web-based disclosure in the Middle East. *Journal of Financial Reporting and Accounting*, 16(3), 464–489.
- Adityawarman, A., & Khudri, T. B. Y. (2017, August). The impact of internet financial reporting practices on the company's market value: A study of listed manufacturing companies in Indonesia. In *6th International Accounting Conference (IAC 2017), Yogyakarta, Indonesia* (pp. 48-53).
- Ahmed, A. H., Burton, B. M., & Dunne, T. M. (2017). The determinants of corporate internet reporting in Egypt: an exploratory analysis. *Journal of Accounting in Emerging Economies*, 7(1), 35–60.
- Al Sawalqa, F. A., & Al-Msiedeen, J. (2021). Importance and potential advantages of web-based corporate disclosure in Jordan: Current status and future aspirations. *Business and Management Horizons*, 9(1), 11-39.
- Al-Najjar, B., & Abed, S. (2014). The association between disclosure of forward-looking information and corporate governance mechanisms: Evidence from the UK before the financial crisis period. *Managerial Auditing Journal*, 29(7), 578–595.
- Aly, D., Simon, J., & Hussainey, K. (2010). Determinants of corporate internet reporting: evidence from Egypt. *Managerial Auditing Journal*, 25(2), 182–202.
- Bassyouny, H., Abdelfattah, T., & Tao, L. (2020). Beyond narrative disclosure tone: The upper echelons theory perspective. *International Review of Financial Analysis*, 70(April), available at:<https://doi.org/10.1016/j.irfa.2020.101499>.

- Basuony, M. A., Mohamed, E. K., & Samaha, K. (2018). Board structure and corporate disclosure via social media: An empirical study in the UK. *Online Information Review*, 42(5), 595–614.
- Beattie, V., McInnes, B., & Fearnley, S. (2004). A methodology for analysing and evaluating narratives in annual reports: A comprehensive descriptive profile and metrics for disclosure quality attributes. *Accounting Forum*, 28(3), 205–236.
- Beretta, S., & Bozzolan, S. (2004). A framework for the analysis of firm risk communication. *International Journal of Accounting*, 39(3), 265–288.
- Beretta, S., & Bozzolan, S. (2008). Quality versus quantity: The case of forward-looking disclosure. *Journal of Accounting, Auditing and Finance*, 23(3), 333–375.
- Botti, L., Boubaker, S., Hamrouni, A., & Solonandrasana, B. (2014). Corporate governance efficiency and internet financial reporting quality. *Review of Accounting and Finance*, 13(1), 43–64.
- Boubaker, S., Lakhal, F., & Nekhili, M. (2012). The determinants of web-based corporate reporting in France. *Managerial Auditing Journal*, 27(2), 126–155.
- Bouten, L., Everaert, P., Van Liedekerke, L., De Moor, L., & Christiaens, J. (2011, September). Corporate social responsibility reporting: A comprehensive picture?. *Accounting Forum*, 35(3), 187–204.
- Bowrin, A. R. (2015). Comprehensiveness of internet reporting by Caribbean companies. *Journal of Accounting in Emerging Economies*, 5(1), 2–34.
- Buckby, S., Gallery, G., & Ma, J. (2015). An analysis of risk management disclosures: Australian evidence. *Managerial Auditing Journal*, 30(8–9), 812–869.
- Campbell, D., & Shrives, P. (2001). Mission statements in corporate annual reports : Signaling what and to. *Business and Society Review*, 65–87.

- Chong, S., & Rahman, A. (2019). Web-based impression management? Salient features for CSR disclosure prominence. *Sustainability Accounting, Management and Policy Journal*, 11(1), 99–136.
- Davey, H., & Homkajohn, K. (2004). Corporate internet reporting: An Asian example. *Problems and Perspectives in Management*, 2(2), 211–227.
- Dey, P. K., Roy, M., & Akter, M. (2020). What determines forward-looking information disclosure in Bangladesh?. *Asian Journal of Accounting Research*, 5(2), 225–239.
- Djajadikerta, H. G., & Trireksani, T. (2012). Corporate social and environmental disclosure by Indonesian listed companies on their corporate web sites. *Journal of Applied Accounting Research*, 13(1), 21–36.
- Dolinšek, T., & Lutar-Skerbinjek, A. (2018). Voluntary disclosure of financial information on the internet by large companies in Slovenia. *Kybernetes*, 47(3), 458–473.
- Elgammal, M. M., Hussainey, K., & Ahmed, F. (2018). Corporate governance and voluntary risk and forward-looking disclosures. *Journal of Applied Accounting Research*, 19(4), 592–607.
- Ibrahim, A. E. A., & Hussainey, K. (2019). Developing the narrative risk disclosure measurement. *International Review of Financial Analysis*, 64(May), 126–144.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial. *Journal of Financial Economics*, available at:[https://doi.org/http://dx.doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/http://dx.doi.org/10.1016/0304-405X(76)90026-X).
- Jia, J., Munro, L., & Buckby, S. (2016). A finer-grained approach to assessing the “quality” (“quantity” and “richness”) of risk management disclosures. *Managerial Auditing Journal*, 31, available at:<https://doi.org/10.1108/MAJ-12-2014-1135>.
- Jones, M. J., & Xiao, J. Z. (2004). Financial reporting on the Internet by 2010: A consensus view. *Accounting Forum*, 28(3), 237–263.

- Kaur, M., & Kaur, M. (2020). The impact of bank-specific attributes on web based disclosure practices of global banks. *Management & Accounting Review (MAR)*, 19(1), 103-134.
- Kelton, A. S., & Yang, Y. W. (2008). The impact of corporate governance on Internet financial reporting. *Journal of accounting and Public Policy*, 27(1), 62-87.
- Khalil, A., & Maghraby, M. (2017). The determinants of internet risk disclosure: Empirical study of Egyptian listed companies. *Managerial Auditing Journal*, 32(8), 746–767.
- Kiliç, M. (2016). Online corporate social responsibility (CSR) disclosure in the banking industry: Evidence from Turkey. *International Journal of Bank Marketing*, 34(4), 550–569.
- Kothari, S. P., Shu, S., & Wysocki, P. D. (2009). Do managers withhold bad news?. *Journal of Accounting Research*, 47(1), 241–276.
- López-Arceiz, F. J., Torres, L., & Bellostas, A. J. B. A. J. (2019). Is online disclosure the key to corporate governance?. *Online Information Review*, 43(5), 893–921.
- Loughran, T., & McDonald, B. (2011). When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *Journal of Finance*, 66(1), 35–65.
- Michelon, G., Pilonato, S., & Ricceri, F. (2015). CSR reporting practices and the quality of disclosure: An empirical analysis. *Critical Perspectives on Accounting*, 33, 59–78.
- Musleh Al-Sartawi, A., & Reyad, S. (2018). Signaling theory and the determinants of online financial disclosure. *Journal of Economic and Administrative Sciences*, 34(3), 237–247.
- Nair, R., Arshad, R., Muda, R., & Aeisha Joharry, S. (2022). Web-disclosure practices for transparency and the sustainability of non-profit organisations. *International Review on Public and Nonprofit Marketing*, Vol. 1.

- Nassir Zadeh, F., Salehi, M., & Shabestari, H. (2018). The relationship between corporate governance mechanisms and internet financial reporting in Iran. *Corporate Governance (Bingley)*, 18(6), 1021–1041.
- Nel, G., & Baard, R. (2019). Minimum corporate website disclosure levels and information asymmetry: Evidence from Johannesburg Stock Exchange small-cap companies. *South African Journal of Accounting Research*, 33(3), 187–204.
- Ntim, C. G., Lindop, S., & Thomas, D. A. (2013). Corporate governance and risk reporting in South Africa: A study of corporate risk disclosures in the pre- and post-2007/2008 global financial crisis periods. *International Review of Financial Analysis*, 30, 363–383.
- OJK. (2015), *OJK Regulation No.8/POJK/2015 about Website Content*, <https://www.ojk.go.id/id/kanal/pasar-modal/regulasi/peraturan-ojk/Pages/Peraturan-OJK-Nomor-8-POJK-04-2015-tentang-Situs-Web-Emiten-atau-Perusahaan-Publik.aspx>.
- Robertson, D. C., & Nicholson, N. (1996). Expressions of corporate social responsibility in U.K. Firms. *Journal of Business Ethics*, 15(10), 1095–1106.
- Rowter, K. (2016). Indonesia capital market developments and challenges. *Nomura Journal of Asian Financial Markets*, 1(1), 9–13.
- Sadou, A., Alom, F., & Laluddin, H. (2017). Corporate social responsibility disclosures in Malaysia: Evidence from large companies. *Social Responsibility Journal*, 13(1), 177–202.
- Sandhu, A., & Singh, B. (2019). Board composition and corporate reporting on internet: Indian evidence. *Journal of Financial Reporting and Accounting*, 17(2), 292–319.
- Sarea, A. M. (2020). Web-based financial reporting disclosure: Evidence from selected banks in the Kingdom of Saudi Arabia (KSA). *Journal of Central Banking Theory and Practice*, 9(2), 183–197.

- Sarhan, A. A., & Ntim, C. G. (2018). Firm-and country-level antecedents of corporate governance compliance and disclosure in MENA countries. *Managerial Auditing Journal*, 33(6–7), 558–585.
- Schleicher, T., & Walker, M. (2010). Bias in the tone of forward-looking narratives. *Accounting and Business Research*, 40(4), 371-390.
- Sekaran, U., & Bougie, R. (2016). *Research method for business textbook: A skill building approach*. John Wiley & Sons Ltd.
- Sethi, S. P., Martell, T. F., & Demir, M. (2016). Building corporate reputation through corporate social responsibility (CSR) reports: The case of extractive industries. *Corporate Reputation Review*, 19(3), 219-243.
- Shivaani, M. V., Jain, P. K., & Yadav, S. S. (2019). Development of a risk disclosure index and its application in an Indian context. *Managerial Auditing Journal*, 35(1), 1–23.
- Singh, H., & Singh, A. (2019). Governance disclosure on the internet by leading Indian public sector companies. *Think India Journal*, 22(4), 174-187.
- Uyar, A. (2012). Determinants of corporate reporting on the internet: An analysis of companies listed on the Istanbul Stock Exchange (ISE). *Managerial Auditing Journal*, 27(1), 87–104.
- Vuontisjärvi, T. (2006). Corporate social reporting in the European context and human resource disclosures: An analysis of Finnish companies. *Journal of Business Ethics*, 69(4), 331-354.
- Wang, M., & Hussainey, K. (2013). Voluntary forward-looking statements driven by corporate governance and their value relevance. *Journal of Accounting and Public Policy*, Elsevier Inc., 32(3), 26–49.
- Yanuardi, Y., Vijge, M. J., & Biermann, F. (2021). Improving governance quality through global standard setting? Experiences from the Extractive Industries Transparency Initiative in Indonesia. *The Extractive Industries and Society*, 8(3), 100905.

Appendix 1: Coding Score for A Risk Disclosure Index

| Risk disclosure in annual report | Semantic Properties of the disclosure per Table II | Score per Table II |
|--|--|--------------------|
| <p>ANTAM and Subsidiaries suffers from the negative effect of the Indonesian Rupiah weakening against the US Dollar. As at December 31, 2018, if the Rupiah had weakened/strengthened by 5% against US Dollar (, the profit before income tax of ANTAM and Subsidiaries would have been lower/higher by approximately Rp293,570,533 (2017: Rp139,852,614), mainly as a result of foreign exchange losses/gains on translation of the US Dollar denominated net liabilities.</p> <p>Credit risk is the risk that ANTAM and Subsidiaries will incur a loss arising from their customers' or third parties' failure to fulfil their contractual obligations. ANTAM and Subsidiaries is confident in their ability to continue to control and maintain minimal exposure to credit risk (PT. Aneka Tambang, Tbk's website)</p> | <p>QN/PF/BG</p> | <p>2+3+4=9</p> |
| <p>Risk control is carried out by identifying and evaluating the key risks faced by the Company, determining the strategy and mitigating controls to manage risks, and assessing the continued risk after risk control has been completed.</p> <p>In carrying out the Company's operations, risks are carefully regulated to avoid potential losses to the Company.</p> | <p>QL/ PF./B</p> | <p>1+3+3=7</p> |
| <p>Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices (PT.Indocement Tunggal Perkasa, Tbk's company website)</p> | | |

Appendix 2: Coding score for CSR Disclosure Index

| CSR disclosure in annual report | Semantic Properties of the disclosure per Table 2 | Score per Table 2 |
|---|---|-------------------|
| <p>As the policy of energy efficiency, the Company has established a Policy of Electrical and Fuel Resources Efficiency as the basic guideline for energy conservation. Furthermore, the Company has assigned an Energy Manager who has been certified by the National Board for Professional Certification (BNSP)/LSP-HAKE and is supported by competent organizational and human resources to implement the policy. In 2018, PTBA UPTTE successfully implemented the Electrification Program with the achievement of an energy saving value of 218,255.59 GJoules which meant a decrease in GHG Emissions of 9,782 58 Tons of CO2e (PT.Bukit Asam, Tbk’s website)</p> | <p>VG/MP/QNPI</p> | <p>1+1+2=4</p> |
| <p>As a professionally managed business entity, WIKA and its subsidiaries run its business activities in an ethical, honest and appropriate way. We have a Code of Conduct, which is the basic for a behaviour of full integrity for each employee without any exception. WIKA conducts its operational activities cooperate with the Attorney General Office to attain legal advisory advices, assistance in association to engage with third parties, settlements on the company’s receivable accounts, resolution on disputes, and negotiation-mediation activities during a dispute (PT. Wijaya Karya, Tbk)</p> | <p>VG/MP</p> | <p>1+1=2</p> |